

Brushless Torque Motors

DB-4000 SERIES SPECIFICATIONS @ 25°C

Part Number		DB-4000-B-1ES	DB-4000-C-1ES	DB-4000-D-1ES	DB-4000-E-1ES
Size Constants					
	Units				
Peak Torque, T_P	oz-in	2000	3000	4000	5000
Motor Constant, K_M	oz-in/ \sqrt{W}	67.2	91.0	111.5	129.7
Number of Poles		6	6	6	6
Number of Phases		3"Y"	3"Y"	3"Y"	3"Y"
Weight	oz (nom)	5.9	8.5	11.1	13.6
Motor Inertia, J_M	oz-in-s ²	3.65E-02	5.50E-02	7.35E-02	9.20E-02
Friction Torque, T_F	oz-in	10	15	20	25
Electrical Time Constant, τ_E	ms	3.27	3.92	4.44	4.76
Mechanical Time Constant, τ_M	ms	1.15	0.94	0.84	0.77
Temperature Rise, Housed TPR'	°C/W	1.6	1.2	1.0	0.8
Winding Constants					
	Units				
Torque Sensitivity, K_T^*	oz-in/amp	66.5	99.7	132.9	166.1
Back EMF, K_E	V per rad/s	0.469	0.704	0.938	1.173
Terminal Resistance, R_M	ohms (nom)	0.98	1.20	1.42	1.64
Terminal Inductance, L_M	mH (nom)	3.2	4.7	6.3	7.8
Voltage, Stalled at Peak Torque, V_P	volts	29.5	36.0	42.6	49.4
Amps at Peak Torque, I_P	amps	30.1	30.0	30.0	30.1

Integral Horsepower Design Maximums: 650 VDC, 12,000 RPM, 7% Kt roll off at I_P

*For Six-Step Excitation

DB-4000 Series Typical Outline Drawing

